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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,855	09/30/2004	Eiji Ihara	Q69582	4304

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EXAMINER	
MARCHESCHI, MICHAEL A	
ART UNIT	PAPER NUMBER
1755	

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/509,855	IHARA, EIJI	
	Examiner	Art Unit	
	Michael A. Marcheschi	1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *2/23/06*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,8 and 10-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,8 and 10-22* is/are rejected.

7)☒ Claim(s) *1* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/21/06 has been entered.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 8, 10 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 is indefinite because if the cobalt-phosphorous coating is **directly** on the abrasive surface, as defined by claim 1, claim 1 implies that the coating is a single layer. In view of this, claim 8 does not further define the coating.

Claim 10 is indefinite because it defines the bonding metal further contains nickel but claim 1 already defines that the bonding metal contains nickel (i.e. nickel-phosphorous). In the response dated 2/23/06, applicants state that nickel as recited in claim 10 is different from nickel-phosphorous, as recited in claim 1. Although a 100% nickel bonding metal is different from a nickel-phosphorous bonding metal, claim 10, as drafted, only defines that the bonding metal further contains nickel, but the bonding metal defined in claim 1 already contains nickel, as is

apparent from the recitation of a **nickel**-phosphorous bonding metal. Claim 10 does not clearly define that a different nickel bonding metal is used (assuming combination supported).

Claim 22 indefinite as to the way it is drafted. Since this claim does not define how the bonding metal is applied to the coated grains (i.e. by a separate bath), the last 3 lines this claim, as drafted, imply that the coating is the bonding metal which is outside the scope of claim 1. In other words, the limitation "and thereafter bonding with the bonding metal" does not clearly define that the bonding metal is independent of the coating metal, thus being outside the scope of claim 1. In addition, how is the bonding metal applied to the coated grain?

Claim 1 objected to because after "layer" and comma is present and this comma should be canceled. Appropriate correction is required.

Claims 1, 8 and 10-17 are rejected under 35 U.S.C. 103(a) as obvious over Borse (771) in view of Grotepass et al.

Borse teaches in column 2, lines 60-62 and column 3, lines 48-54, diamond grains (size of 20-5000 microns) having a coating of cobalt-phosphorous. The coated abrasive grains can be bonded together with a metal.

Grotepass et al. teaches in column 1, line 60-column 2, line 1, that nickel-phosphorous is a known bonding matrix for diamond particles (used to make diamond bonded tools).

Borse states that the coated particles can be bonded with a metal (bonding matrix) and the use of nickel-phosphorous, as the bonding matrix, would have been well within the scope of the skilled artisan because Grotepass et al. teaches that this material is a conventionally known metal

bonding matrix for diamond particles. In other words, one skilled in the art would have appreciated the use of nickel phosphorus as the metal bonding material according to Borse because this is a conventional metal bonding matrix for diamond particles, as shown by Grotepass et al. In addition, Borse does not specifically define the metal bonding matrix, thus it is the examiners position that the lack of specific metal bonding matrix implies to the skilled artisan that any conventional metal bonding matrix (known for the same purpose-bonding diamond particles together) can be used and since Grotepass et al. teaches that the claimed metal bonding matrix is conventional, its use thereof is well within the scope of the skilled artisan. With this combination, claims 1, 8, 10-14 are met. Since the coated grains are bonded with a metal bond, as defined above, this also broadly reads on claim 17.

With respect to claims 15-16, Borse states that the grains obtained are bound by a matrix and the broad interpretation of grains implies 2 or more, thus encompassing the claimed content.

Claim 17 is rejected under 35 U.S.C. 103(a) as obvious over Borse (771) in view of Grotepass et al., as applied to claim 1 above, and further in view of Conradi.

This is an alternative rejection of claim 17 based on over Borse (771) in view of Grotepass et al. alone, as defined above.

Conradi et al. teaches in claim 1 a conventional amount of diamond particles to be used in metal bonded abrasive bodies.

With respect to claim 17, Borse clearly implies that the coated grains are used in a metal bonding matrix to form a tool and although this reference is silent with respect to the amount of diamond in the tool, it is the examiners position that one skilled in the art would have appreciated

that at least 5% diamonds must be present in order to obtain the most beneficial grinding tool (i.e. less than 5% would not produce a tool with optimized abrasive quality), as evidenced by Conradi. Although the amount is defined in volume percent when converted to weight percent, it appears to encompass the claimed broad range absent evidence to the contrary.

Claim 20 is rejected under 35 U.S.C. 103(a) as obvious over Borse (771) in view of Grotepass et al., as applied to claim 1 above and further in view of Slutz et al.

The teachings of Slutz et al. are defined in the previous office action.

With respect to claim 20, the primary reference defines that the grains are coated and it is the examiners position that the skilled artisan would have found the use of any conventional coating technique (Slutz et al teaches a conventional technique) obvious. In addition, Borse does not specifically define the coating technique, thus it is the examiners position that the lack of specific technique implies to the skilled artisan that any conventional technique (known for the same purpose-coating diamond with a metal) can be used and since Slutz et al. teaches that the claimed technique is a conventional coating technique (see column 6, lines 54+), its use thereof is well within the scope of the skilled artisan.

Claim 21 is rejected under 35 U.S.C. 103(a) as obvious over Borse (771) in view of Grotepass et al., as applied to claim 1 above and further in view of Julien.

Julien teaches that electroplating is a conventional binding technique, see column 1, line 68-column 2, line 4).

With respect to claim 21, the Borse (771) in view of Grotepass et al. defines that the grains are bonded by the claimed material and it is the examiners position that the skilled artisan would have found the use of any conventional bonding technique (Julien teaches that electroplating is a conventional binding technique, see column 1, line 68-column 2, line 4) obvious. In addition, Borse does not specifically define the bonding technique, thus it is the examiners position that the lack of specific technique implies to the skilled artisan that any conventional technique (known for the same purpose-bonding diamond with a metal) can be used and since Julien teaches that the claimed technique is a conventional bonding technique, its use thereof is well within the scope of the skilled artisan.

The examiner acknowledges that Julien generally uses the plating method to plate particles on a substrate, however, said plating method is broadly used to bond a metal to another metal and since the coated particle are coated with a metal and bonded together, the bond takes place between two metal surfaces, thus being of the same concept as Julien. One skilled in the art would have appreciated the concept of how to bond metal surfaces together, that being the technique defined by Julien.

Claim 22 is rejected under 35 U.S.C. 103(a) as obvious over Borse (771) in view of Grotepass et al., as applied to claim 1 above and further in view of Slutz et al., Julien and Roy.

The teachings of Slutz et al. and Roy are defined in the previous office action.

With the coating process and bonding process being obvious as defined above, it is the examiners position that if the coating is by a plating technique, as is clearly shown by Slutz et al. one skilled in art would have appreciated and found obvious the steps used, which include,

immersion of the diamonds in a plating bath with stirring, as is clearly shown by Roy, as being a conventional way to plate diamonds. Although Roy does not literally define "dipping", it is the examiners position that once the particles are plated, they are removed from the bath, thus dipping, in its broad interpretation, is appreciated. This reference clearly uses stirring and the use of stirring is for a more homogeneous deposition and to keep the solution in a homogeneous state. With respect to the bonding aspect, plating as a bonding technique is obvious for the reasons defined in the above rejection (Borse (771) in view of Grotepass et al., as applied to claim 1 above and further in view of Julien) which are incorporated herein by reference. Although a simultaneous coating and bonding process is not defined, it is the examiners position that using a simultaneous process of coating and bonding would have been appreciated by (obvious to) the skilled artisan in order to minimize the cost of process. In other words, it is the examiners position that using a simultaneous process of coating and bonding would have been appreciated by (obvious to) the skilled artisan in view of economics factors. A simultaneous process is less time consuming (and thus more economical) when compared to a multi step process.

In view of the teachings as set forth above, it is the examiners position that the references reasonably teach or suggest the limitations of the rejected claims.

Claims 18-19 are rejected under 35 U.S.C. 103(a) as obvious over Borse (771) in view of Grotepass et al., as applied to claim 1 above and further in view of Slutz et al.

Borse (771) in view of Grotepass et al., as applied to claim 1 above, fail to teach the use of the coated and metal bonded abrasives in resin products and coated abrasive product.

The concept of using the coated/metal bonded products of Borse (771) in view of Grotepass et al. in resin products and coated abrasive product is obvious to the skilled artisan because Slutz et al. generally teaches that metal coated/metal bound abrasive multigrain particles are known to be incorporated into a resin matrix (column 7, lines 44-47) and coated abrasive product (column 7, lines 54-55). The application of the abrasive grains according to Borse (771) in view of Grotepass et al. in any conventionally known abrasive application is clearly within the scope of the skilled artisan.

Applicant's arguments with respect to all of the claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-12331233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MM
5/06

Michael A Marcheschi
Primary Examiner
Art Unit 1755